

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554**

In the Matter of)	
)	
Review of the Commission's Rules)	WT Docket No. 17-200
Governing the 896-901/935-940 MHz)	
Band)	
)	

To: The Commission

REPLY COMMENTS OF SOUTHERN COMPANY SERVICES, INC.

Southern Company Services, Inc., on behalf of its electric utility operating company and communications service provider affiliates (collectively, “Southern”), hereby submits its reply comments in response to the Commission’s *Notice of Proposed Rulemaking* in the above-captioned proceeding requesting comment on the proposed reconfiguration of the 900 MHz band (896-901/935-940 MHz) to facilitate the development of broadband technologies and services.¹

As an initial matter, Southern is concerned by the suggestion made by some commenters that commercial offerings from FirstNet and other commercial providers are a suitable alternative to a broadband allocation in the 900 MHz band. As Southern and other parties have previously explained, both in this and in other proceedings, commercial broadband service providers in many cases generally cannot meet the levels of coverage, capacity, reliability, and security required by utilities and CII and are unable to provide the dedicated capacity needed for

¹ / *Review of the Commission’s Rules Governing the 896-901/935-940 MHz Band*, WT Docket No. 17-200, Notice of Proposed Rulemaking, FCC 19-18 (rel. March 14, 2019) (“*NPRM*”).

data-intensive, low latency CII applications and uses. Accordingly, while FirstNet and other commercial broadband offerings may be able to support some utility communications needs, they cannot be considered an effective alternative to the proposed 900 MHz broadband allocation.

Southern and other commenters agree that the Commission's proposal to adopt performance requirements for the 900 MHz broadband license based on population coverage thresholds similar to those for commercial service providers would not be appropriate to the anticipated use of the band by utility and other CII and enterprise entities. Southern again emphasizes the need for the Commission to adopt alternative performance metrics to accommodate the needs and operational realities of these entities, including an alternative substantial service showing that the use of the spectrum is consistent with the public interest. Southern also supports a voluntary exchange process to facilitate the realignment of the 900 MHz band and joins other commenters in supporting a finite period for this process to occur. Southern submits that a period of between two and three years for voluntary negotiations and relocation would be reasonable. Southern also agrees that any mandatory realignment process should exclude "complex" systems.

Finally, Southern takes this opportunity to caution potential licensees and users of the 900 MHz broadband allocation of the shortcomings of relying on a 1.4/1.4 MHz channel based on Southern's experience with its own LTE deployment, which demonstrated that a 1.4/1.4 MHz channel is insufficient to support many utility needs.

I. COMMERCIAL OFFERINGS ARE NOT AN EFFECTIVE ALTERNATIVE TO A BROADBAND ALLOCATION IN THE 900 MHz BAND

There has been broad recognition throughout this proceeding of the need to provide utilities and other CII and enterprise entities with access to much-needed broadband spectrum.

As UTC observes, utilities “are under increasing demands for access to licensed broadband spectrum to support smart grid and cybersecurity requirements, as well as other utility applications,” and the record contains numerous examples of the importance of broadband in meeting both current and future utility and CII needs.² As Southern and other commenters have previously explained, however, commercial broadband service providers in many cases generally cannot meet the levels of coverage, capacity, reliability, and security required by utilities and CII and are unable to provide the dedicated capacity needed for data-intensive, low latency CII applications and uses.³ Southern is therefore concerned by the suggestion made by some commenters that commercial offerings from FirstNet and other commercial providers are a suitable alternative to a broadband allocation in the 900 MHz band.⁴

The FirstNet system is a public safety network designed and operated first and foremost to serve public safety users, not utilities or other CII entities. Although AT&T is allowed to use FirstNet’s spectrum for other, commercial purposes, it may only do so when this spectrum is not being used by public safety. Public safety users will always have priority over and be able to preempt any other users of the FirstNet system. There is no certainty that utility communications would receive any prioritization over any commercial or other non-public safety uses of either

² / Comments of the Utilities Technology Council (“UTC”) at 3. *See also* NPRM at ¶¶ 7-8; Comments of Southern at 5 (providing examples of utility and CII use cases for broadband); Comments of Southern California Edison (“SCE”) at 2-3; Comments of Ameren at 3; Comments of Duke Energy at 4-5 and 10.

³ / *See, e.g.*, Comments of Southern at 5; Comments of UTC at 5 (“...[A]lternatives such as unlicensed operations and commercial services do not provide the same level of reliability as private utility networks.”); Comments of Duke Energy at 2 (“[T]hese commercial networks have not been designed and implemented to provide the robust and highly reliable mission critical communications services required by energy utilities.”).

⁴ / *See* Comments of NextEra at 13; Comments of Lower Colorado River Authority (“LCRA”) at 16; Comments of the Critical Infrastructure Coalition (“CIC”) at 5-6.

the FirstNet system or any other commercial broadband network. These commercial broadband offerings are also unable to provide utilities with the dedicated capacity necessary to support many critical utility communications needs, nor would it make any business or operational sense for them to do so. Furthermore, it is not clear that any of these commercial offerings would be capable of meeting federally-mandated reliability requirements for communications involving critical components of the electric utility infrastructure.

In addition, most commercial broadband offerings – including FirstNet – do not provide coverage in many areas, particularly rural areas, where utility and other CII infrastructure is located. Although FirstNet is expected to expand its coverage over time, this expansion will be driven by the needs of public safety, which is focused on getting coverage out to where people live and work and not necessarily to where critical infrastructure facilities – such as electric transmission lines and oil and gas pipelines – are located.

Moreover, the use of services provided by a commercial broadband network operator provides little or no flexibility for a utility to deploy its own network, equipment, and services that meet the utility's particular specifications and needs. By contrast, the Commission's proposal for a broadband allocation in the 900 MHz band provides the opportunity for a utility to build its own private network – either as or in partnership with a broadband licensee – tailored to meet its specific communications needs and requirements.

Accordingly, while FirstNet and other commercial broadband offerings may be able to support some utility communications needs, they cannot be considered an effective alternative to the proposed 900 MHz broadband allocation.

II. LICENSING AND REALIGNMENT ISSUES FOR THE 900 MHz BAND

Southern provides reply comments below on two specific issues raised in the *NPRM*: (a) the appropriate performance requirements for the 900 MHz broadband license; and (b) the appropriate period for the voluntary exchange process for realignment of the 900 MHz band.

A. Performance Requirements Must Be Appropriate to the Anticipated Use of the Spectrum and Must Include Alternative Performance Metrics

Southern and other commenters agree that the Commission's proposal to adopt performance requirements for the 900 MHz broadband license based on population coverage thresholds similar to those for commercial service providers would not be appropriate to the anticipated use of the band by utility and other CII and enterprise entities.⁵ Like Southern, these commenters recognize that the anticipated users of the 900 MHz broadband spectrum will be CII and industrial entities who will be deploying private wireless networks to meet their specific operational needs rather than to cover a certain number of people with their signal.⁶

UTC supports the adoption of performance requirements based solely on geographic coverage, stating that, "[a]s a practical matter, utilities and other private wireless licensees tend to deploy networks to cover both populated and unpopulated areas."⁷ PDV speculates that the Commission's proposed performance requirements "may prove reasonable," but adds the caveat that "the users of this spectrum are likely to be industrial entities deploying their own private networks to meet defined operating requirements with specific coverage parameters."⁸ PDV

⁵ / See, e.g., Comments of UTC at 25-26 ("Adopting performance requirements based purely on population coverage ... would be inconsistent with the likely use of the band by broadband licensees such as utilities.").

⁶ / See Comments of Southern at 9-10; Comments of UTC at 25-26; Comments of Duke Energy at 17; Comments of pdvWireless, Inc. ("PDV") at 35.

⁷ / Comments of UTC at 25.

⁸ / Comments of PDV at 35.

states that the Commission may therefore conclude “that more tailored performance requirements, ones tied to geographic rather than population coverage, should be adopted.”⁹ Southern generally agrees that a geographic coverage requirement may be more appropriate than one based purely on the population covered by the licensee’s signal. However, Southern is concerned that a requirement based solely on geographic coverage may not sufficiently account for the actual deployment of utility and CII infrastructure within a particular geographic license area.

Southern pointed out in its comments that the use of the 900 MHz broadband spectrum to support vital public services will provide significant benefits to a much greater percentage of the population than is actually “covered” by a licensee’s signal, and therefore recommended that the Commission adopt performance requirements based on the actual service and benefit to the public that the use of the spectrum is providing.¹⁰ Duke Energy similarly proposes the adoption of performance requirements based on the population covered by the utility/CII user’s *infrastructure* rather than by the signal itself.¹¹ Specifically, Duke Energy proposes performance requirements that would require effective coverage of an area that includes utility/CII infrastructure serving 30% of the utility/CII user’s customers within six years, and effective coverage of an area that includes utility/CII infrastructure serving 60% of the utility/CII user’s customers within twelve years.¹² Southern supports the approach taken by Duke Energy, which essentially combines a geographic coverage requirement (the area where the utility/CII user’s

⁹ / *Id.*

¹⁰ / Comments of Southern at 9.

¹¹ / Comments of Duke Energy at 17.

¹² / *Id.*

infrastructure is located) with a population coverage requirement based on the percentage of the population that is benefitting from the use of the spectrum.

However, Southern must again emphasize the need for the Commission to also adopt alternative performance metrics to accommodate the needs and operational realities of private wireless users such as electric utilities and other CII entities. Southern therefore agrees with PDV that any performance requirements that are adopted for the 900 MHz license should also provide for an alternative substantial service showing that the use of the spectrum is consistent with the public interest.¹³ As Southern described in its comments, the Commission has previously provided alternatives for demonstrating substantial service – such as “[p]roviding specialized or technologically sophisticated service that does not require a high level of coverage to benefit consumers” or “[p]roviding service to niche markets or areas outside the areas served by other licensees” – and should adopt similar alternative performance standards for the 900 MHz band.¹⁴

B. The Period for the Voluntary Exchange Process Should be Finite

The record overwhelmingly supports the Commission’s proposal to initially rely on a market-driven voluntary exchange process to facilitate the realignment of the 900 MHz band.¹⁵ In order to ensure an efficient and complete transition process, Southern supports a voluntary

¹³ / Comments of PDV at 35.

¹⁴ / Comments of Southern at 9-10 (citing 47 C.F.R. § 27.14(o); 47 C.F.R. § 27.14(o)(1)(iv) and (v)).

¹⁵ / *See, e.g.*, Comments of Southern at 6-7; Comments of Ameren at 5; Comments of SCE at 11; Comments of UTC at 15-16; Comments of United Parcel Service (“UPS”) at 12-14; Comments of Alliant Energy at 2; Comments of PDV at 13-14; Comments of the Enterprise Wireless Alliance (“EWA”) at 7.

exchange process that provides a reasonable amount of time for negotiations and the conclusion of an agreement, after which some form of mandatory relocation may be appropriate.

Other commenters likewise support a finite period for the voluntary exchange process to occur. For example, the Hawaiian Electric Companies state that two years would be a reasonable timeframe.¹⁶ UPS recommends that the prospective broadband licensee and covered incumbents be permitted to negotiate on a voluntary basis for up to one year, “after which the parties enter into a dispute resolution process, e.g., a Commission-guided negotiation or a mediation process.”¹⁷ Ameren, EWA, and PDV support the Commission’s proposed “success threshold” with one-year and two-year benchmarks for the completion of negotiations.¹⁸ And Southern California Edison supports a two-year period for voluntary negotiations, followed by a relocation period of at least five years.¹⁹

On the basis of the record of this proceeding, as well as its own experience with the realignment of the 800 MHz band, Southern submits that the period for voluntary negotiations and relocation should be between two and three years, after which the process should become mandatory. Southern believes that this will provide a reasonable amount of time to carry out the voluntary realignment of the 900 MHz band while ensuring that the overall realignment process

¹⁶ / Comments of the Hawaiian Electric Companies at 8.

¹⁷ / Comments of UPS at 14.

¹⁸ / See Comments of Ameren at 5; Comments of EWA at 7; Comments of PDV at 16.

¹⁹ / Comments of SCE at 11. SCE states that “[b]ased on [SCE’s] own experience in this area, two years is a reasonable time frame to permit completion of voluntary negotiations with incumbents who have been incentivized to reach a good faith agreement and then to complete the physical relocation of the affected stations. After that period, they would be forced to relocate at their own expense.” *Id.* at 15.

will be completed in a timely manner. At the same time, Southern agrees with other commenters that any mandatory realignment process should exclude “complex” systems.²⁰

III. SOUTHERN CAUTIONS AGAINST RELIANCE ON A 1.4/1.4 MHz CHANNEL, WHICH IS INSUFFICIENT TO MEET UTILITY AND CII BROADBAND COMMUNICATIONS NEEDS

A number of commenters recommend that the Commission allow, but not require, the deployment of a 1.4/1.4 MHz channel in the 900 MHz broadband segment as a preliminary step towards a 3/3 MHz deployment.²¹ Southern does not oppose making this option available. However, Southern takes this opportunity to caution potential licensees and users of the 900 MHz broadband allocation of the shortcomings of relying on a 1.4/1.4 MHz channel based on Southern’s experience with its own LTE deployment, which demonstrated that a 1.4/1.4 MHz channel is insufficient to support many utility needs.

First, data throughput speeds for a 1.4/1.4 MHz channel are lower than for a 3/3 MHz channel, and this lower throughput speed may not be suitable for certain mission critical applications. In addition, a 1.4/1.4 MHz LTE channel is not able to support a number of the applications, technologies, and use cases that have been identified for utility broadband communications. The applications and technologies that are not supported include, but are not limited to, one-to-many push-to-talk (“PTT”), 4x2 multiple-input multiple-output (“MIMO”), and evolved Multimedia Broadcast Multicast Services (“eMBMS”). There is also decreased vendor support for features on a 1.4/1.4 MHz channel.

²⁰ / See, e.g., Comments of UTC at 21-22; Comments of LCRA at 10-12; Comments of PDV at 17-18.

²¹ / See Comments of UTC at 5; Comments of SCE at 6; Comments of NextEra at 18. See also Comments of the Nat’l Ass’n of Manufacturers and MRFAC, Inc. at 4 (suggesting that the Commission “revisit the feasibility of narrowing the broadband allocation” to a 2/2 or 1.4/1.4 MHz configuration); Comments of City of Los Angeles Dept. of Water and Power at 7-8 (urging the broadband allocation to be 1.4/1.4 MHz rather than 3/3 MHz).

Furthermore, a 1.4/1.4 MHz channel is very inefficient with respect to the allocation of channel resources between signaling/control and data capacity. This is because all LTE channels require a similar amount of signaling and control resources, regardless of channel size. Thus, for larger LTE channel sizes, proportionally more channel resources are available for data, which increases the overall efficiency of the larger channel. In other words, because the signaling and control resources are similarly sized for both 1.4/1.4 MHz and 3/3 MHz channel sizes, the amount of resources available for data in a 3/3 MHz channel is significantly more than a simple doubling of the data resources of a 1.4/1.4 MHz channel. Among other things, the greater capacity and efficiency of a 3/3 MHz channel means that it can support more users (and uses) in a given geographic area.

Accordingly, while Southern does not oppose allowing for the option of deploying a 1.4/1.4 MHz channel in the 900 MHz band, Southern cautions that this will fall well short of meeting the broadband communications needs of utilities and CII and could lead to increased costs and delayed implementation of critical utility and CII communications capabilities as users find it necessary to subsequently migrate to a 3/3 MHz configuration.

Respectfully submitted,

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